The Ecological Development of Yura-Oishi Research Village in the Southern Area of Sumoto City

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Outline of Yura-Oishi Research Village

Yura-Oishi Research Village ranges 5000ha area consisting of southern area of Sumoto City facing to Kitan-Kaikyo Strait and its coastal area (see Fig.1). There are flourish terrestrial and marine natural environment, and local community (about 5000 people) which has been co-living with nature.

At Yura-Oishi Research Village, environmental research toward the development harmonizing with organisms and ecosystems (which is called Ecological Development), research communication, environmental education and study, establishment of environmental management system, and exploitation of new industry making environment effective etc., have been actively performed from 1994. These activities are based on cooperation of residents and researchers from university and so on, and on backup from the administration (see Fig.2).

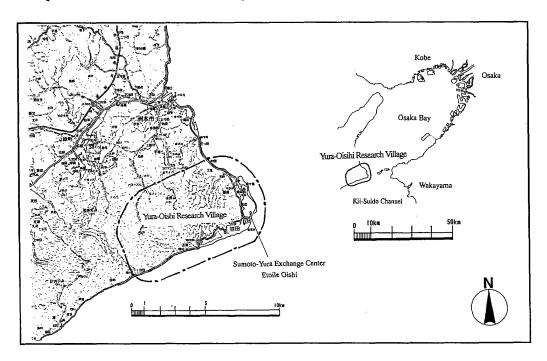


Figure 1. Location and range of Yura-Oishi Research Village

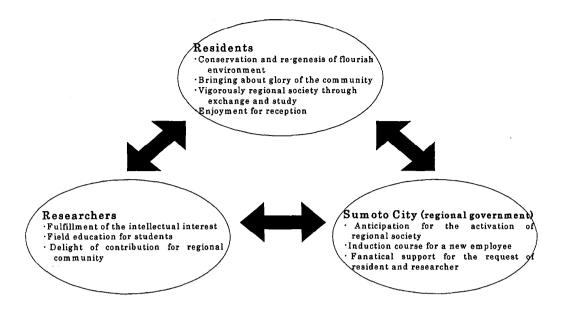


Figure 2. Cooperations based on confidence between residents, researchers and regional government

In April 1999, Sumoto Yura Intellectual Exchange Center: Etoile Oishi was open up. This facility is core of the Yura Oishi Research Village and equipped with conference room, accommodation, and dining hall etc. And then, Yura Oishi Research Village Organizing Council was founded by the residents, the researchers, and the administration. At the same time, international symposium titled as "For the Ecological Development of the Coastal Zone" was held and "Yura Oishi Declaration; For the Ecological Development of the Coastal Zone" was presented.

There was background for the development of Yura-Oishi Research Village. The residents hoped to change the worse regional situation caused by the decrease of younger people and the increase of the composition of older people, and by the stagnation of industry. They felt anxiety because of the decrease of the common opportunity to be concerned with neighbor mountain and coastal zone, and because of the environmental problem such as drifted rubbish from the depth area of Osaka Bay. On the other hand, the researchers wanted to put forward their environmental research, regarding this area as model case, because natural environment in this area was the most flourish of the Osaka Bay area.

The administration supported the residents and the researchers, then series seminar, whose theme was "Environment and Human", was started and the seminar has been continued to 47 times today. The residents and the researchers cooperated with each other and they investigated marine and terrestrial natural environment, held research exchange meeting such as international symposium, and promoted experience seminar attended also by urban dweller.

In Yura-Oishi Research Village, regional development, which is based on confidence between the residents, the researchers, and the regional government, is being put into practice. In this activity, sea and land are regarded as a united environmental area, and key wards are research, education, and study promising regional, broadly and internationally to be dispersed.

2. Concept and purpose of the Development of Yura-Oishi Research Village

At the development of Yura-Oishi Research Village, we should cope with the deterioration of regional activity and the environmental problem, and recognize its role of broad environment model, and then "Ecological development" is set up as concept of the development of Yura-Oishi Research Village.

For the sake of this concept, the following programs are demanded. To actively research regional environment on the basis of broad cooperation of the residents and the researchers, to seek out the concrete plan for sustainable and regenerative environment according to that research, to offer the place for environmental education and study so as to enhance the children's and citizen's awareness in this region and extensive area, and to exploit new industry which effectively utilize the environment. These are the purpose of the development of Yura-Oishi Research Village

3. Process of the Development of Yura-Oishi Research Village

The development of Yura Oishi Research Village was born when the academic researchers joining Research Committee on Osaka Bay Area Mega Infrastructure visited southern part of Sumoto City to seek better environment model for the research on environmental creation of Osaka Bay Area. At that time, the researchers proposed Sumoto City mayor, who wanted to invite university, to create research exchange center utilizing flourish natural environment.

In response to above propose, Sumoto City set up "Sumoto-Yura Intellectual Exchange Center" at 3rd floor in Yura Branch Office of Sumoto City, and offered the space for the researchers of university and research institute in July 1994. At opening ceremony, the residents such as chairman of Yura-Community attended and talk with the researchers for the first time.

At August 1994. "Research Committee of Marine Environment" consisting of the researchers of Osaka Prefecture University, Osaka University, and Research Committee on Osaka Bay Area Mega-Infrastructure, was organized by the researchers visited southern part of Sumoto City in April. They could acquire the financial assistance from Nihon Seimei Foundation and commence "Environment General Investigative Research on the Southern Region of Sumoto City" using Sumoto-Yura Intellectual Research Center as the base of activity. From September, "Series Seminar: Environment and Human" was commenced. Then result of Environment General Investigative Research was reported at "Series Seminar: Environment and Human" and the residents and the researchers share information and common understanding for environmental problem. This situation has

been continuing.

In March 1995, Sumoto City published "Investigative Report on Invitation for University/Research Institute at Sumoto City". This report showed the arrangement plan which covered nearly 1000ha area centering Oishi area as Research/Exchange Zone including core facility.

In July 1995, the researchers proposed that Sumoto Yura area should be arranged as a model area of sustainable development colliving with nature and be called "Yura-Oishi Research Village", when "Symposium: Intellectual Exchange Base —Toward the Creation of Awaji Island in 21st century" was held.

In October 1995, research area expanded to Kaminada area facing to Kii-Suido Channel because of the foundation of "Natural Environment Monitoring Research Committee" by the residents and the researchers in order to comprehend the ecology of wild deer and to consider its coexistence with human. So Yura-Oishi Research Village ranged 5000ha including land and sea.

In 1996, the researchers proposed "Guideline for Land Use of Research Village" (see Fig. 3) and "Guideline for Environmental Management in Research Village" (see Fig. 4) (January). Sumoto City designed "Basic Plan of Research Exchange Center" (March).

In July 1996, "Sumoto City: Marine International Symposium" was held and played effective role for regional consensus and broad the perception of the development of Yura-Oishi Research Village. At the cession of the International Symposium, the warmest reception party was held by the residents.

And then, at Yura-Oishi Research Village, by cooperation between the residents and the researchers, research action toward symbiosis with nature and sustainable development, research communication, and education/study etc. have been continued (see Fig.5, Table 1, and Table 2).

And in April 1999, "Sumoto-Yura Exchange Center: Etoile Oishi" (seminar room, meeting room, and accommodation for 80 guests) was established at scenic site in front of Kitan-Kaikyo Strait and Yura Bay. This establishment reflected the ardor of the residents and the researchers and the effort of Sumoto City.

In 17 April 1999, Yura-Oishi Research Village Organizing Committee was founded. This committee has the purpose that the committee should show future prospect of Research Village, crystallize them, promote the exchange between residents and researchers or urban dwellers, and play a role of effective management of Research Village at a basis of the cooperation between the residents, the administrations, and the researchers etc.

In 18 April, the memory of the foundation of Sumoto-Yura Exchange Center, "International Symposium: For Ecological Development of the Coastal Zone" was held and Yura-Oishi Declaration for ecological development was published. This declaration is for coastal zone of the world, coastal zone of Osaka Bay Area, and Yura-Oishi Research Village.

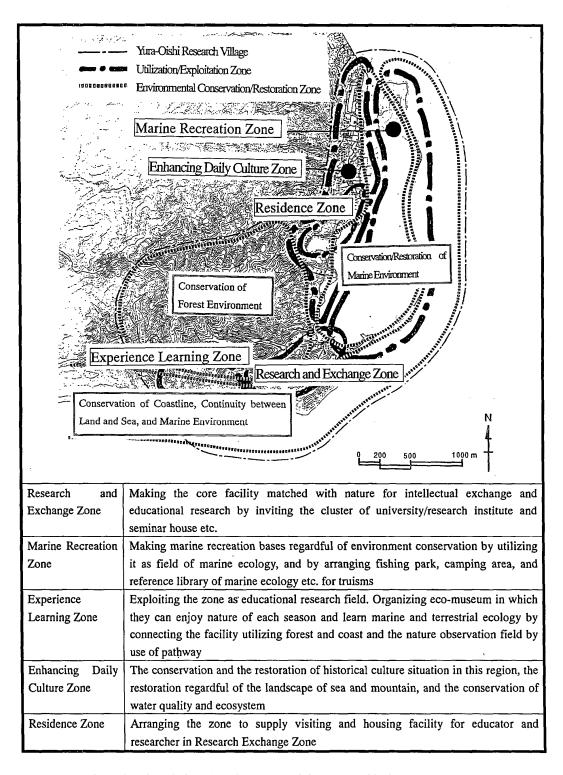


Figure 3. Grand plan of land use and activity at Yura-Oishi Research Village

Environmental Management Desired in Yura-Oishi Research Village

Development of Eco-Social System

- Decrease of the load on water environment and restoration of river environment
- 2 Decrease of the load on marine environment and conservation and restoration of marine-terrestrial environment
- 3 Maintenance and utilization of forest environment
- 4 Promotions of the correct disposal and recycle of waste materials

Enhancement of Symbiotic Relationship with Nature

- 1 Correct land use and space arrangement
- 2 Maintenance of marine-land biodiversity and preservation and management for wildlife
- 3 Sound utilization of marine-land natural environment and development of industry

Action for Environment by Each Sector of Local Community

- 1 Arrangement of the participation requirement
- 2 Promotions of environmental education and study

Cooperation in Wide Area

- 1 Cooperation with each community in Osaka Bay area
- 2 Cooperation with research education institute e.g. university

Direction of Arrangement on Environmental Management System

- 1 Arranging circular social system on daily life and economic, and revaluating the mechanism which sustained and regenerated environment existing with daily life in former times
- 2 Aim to symbiosis with nature where human activity deploy through comprehensive environmental management regarding marine-terrestrial as the combined
- 3 Promoting environmental education and study, continuing to monitor natural environment, and promoting conservation, restoration, and exploitation of environment by use of participation of each sector in local community
- 4 Aim to development of regional society utilizing comprehensive function in the environment and to solution of regional/broad environmental problems, by sharing and utilizing knowledge and acquaintance generated by cooperation and exchange, and by recognizing regional environment in broad social systems on the strength of foreign intelligence through the broad cooperation and exchange with each community in Osaka Bay area and research education agency

Revaluation of the Relationship between Residents and Nature

1 "Should preserve" the relationship between resident and nature

Shellfish gathering on beach in Narugashima Island/ Space in daily life where one can be familiar with sea and mountain (place/institute where one can see sea or mountain)/ Traditional event such as festival closely concerned with sea and mountain/ Fishery (but including the promotion of cultivate fishery)

2 "Should restore" the relationship between resident and nature

Sea bathing and playing in river that was a part of life of the children/ Recreation in each seasons such as collecting seaweed, wild vegetable, and medical plant/ Arrangement of Narugashima Island as a place for daily recreation

3 "Should improve" the relationship between resident and nature

Throwing rubbish into sea or river. Draining waste water into the river. Disappearance of natural waterfront by reclamation or building vertical shore wall

4 "Should create" the relationship between resident and nature

Environmental education enhancing the understanding and the affection for regional environment/ Volunteer action of environment conservation such as the collecting drifted rubbish and the cutting unnecessary plant in mountain/ Scientific investigation and research such as investigation of natural environment and research on mechanism in nature/ Offering the space of experience education and study for citizens and children living in Osaka Bay Area/ Making environmental diagnosis card and setting Conservation Zone and Environment Restoration Zone etc./ Practical action for environmental conservation and restoration

Figure 4. Outline of regional environment management systems at Yura-Oishi Research Village

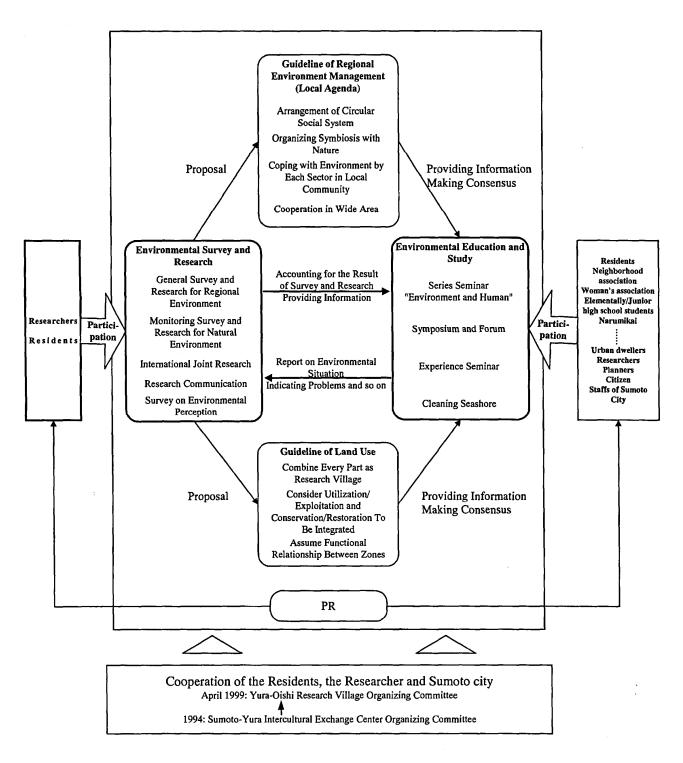


Figure 5. Environmental research, education, and management systems at Yura-Oishi Research Village

Table 1. Major constituents of surveys and researches on environment at Yura-Oishi Research Village

Classification	Aim on action	Organization for the action	Remarks
Comprehensive survey and research on regional environment	Comprehension of situation and characteristic of marine environment Comprehension of the relationship between marine and terrestrial Organizing environmental management system	 Researcher and student of Osaka Prefecture University, Osaka University, Kyoto University, and Wakayama University Research Committee on Osaka Bay Area 	 From August 1994 Large scale and comprehensive survey, 30-50 participants in every spring and autumn Eastern part of Research Village is subjected
Natural environment monitoring survey and research	Development of monitoring system for comprehension of the ecology of wild deer Monitoring seaweed bed and so on	Researcher (Osaka Prefecture University, Osaka University, Mukogawa Woman's College, Research Committee on Osaka Bay Area Mega-Infrastructure, etc.) and research committee consisting of the residents	 October 1995 ~ March 1999 Western part of Research Village is subjected to the research on deer
International joint research	Comprehension of seaweed bed ecosystem Elucidation of mechanism on a combined marine and terrestrial environment	Department of Engineering, Osaka Prefecture	• From April 1994

(Remark) Research Committee on Osaka Bay Area Mega Infrastructure in the table was reorganized into Non Profit Organization; Institute of Environmental Restoration/Creation on Osaka Bay Coastal Zone (in short: NPO Osaka Bay Institute) certificated by Economic Planning Agency of Japan in September 1999

Table 2. Major constituents of environmental educations and studies at Yura-Oishi Research Village

Name	Aim on action	Organization of action/management	Remark
Series Seminar "Environment and Human"	Resident and researcher learn together From fiscal 1999, expand participant to urban dweller and also serve as a eco-tourism training course	Exchange Center Organizing Committee • Fiscal 1999 ~ : Yura-Oishi Research Village Organizing Committee	 Fiscal 1994 ~ 1998 : held 39 times Fiscal 1999 : held 8 times
Experience Seminar	Coming in contact with environment and learning about environment Understanding the situation of drifted rubbish and cleaning seashore	Committee • Student Council of Yura Junior High School • Faculty of Marine System Engineering,	